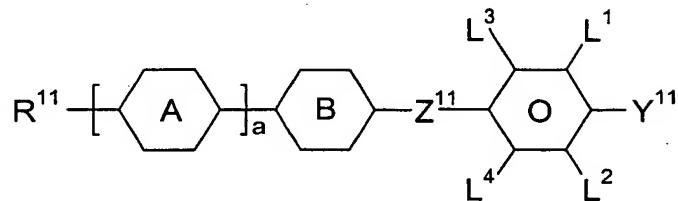


Patent Claims

1. Liquid-crystalline medium comprising
 - at least one compound of the formula I

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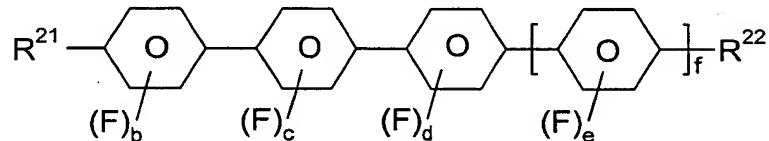


10

and

- at least one compound of the formula II

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II

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in which

L^1 , L^2 , L^3 and L^4 are each, independently of one another, H or F;
 R^{11} is H, a halogenated or unsubstituted alkyl radical having from 1 to 15 carbon atoms, where, in addition, one or more CH_2 groups in these radicals may each be replaced, independently of one another, by $-C\equiv C-$, $-CH=CH-$, $-O-$, $-CO-O-$ or $-O-CO-$ in such a way that O atoms are not linked directly to one another;

25

R^{21} and R^{22} are each, independently of one another, H, Cl, F, CN, SF_5 , SCN, NCS, a halogenated or unsubstituted alkyl radical having from 1 to 15 carbon atoms, where, in addition, one or more CH_2 groups in these radicals may each be replaced, independently of one another, by $-C\equiv C-$, $-CH=CH-$,

30

35

-O-, -CO-O- or -O-CO- in such a way that O atoms are not linked directly to one another;

5 Y^{11} is F, Cl, CN, SF₅, SCN, NCS, a halogenated alkyl radical, a halogenated alkenyl radical, a halogenated alkoxy radical or a halogenated alkenyloxy radical, each having up to 6 carbon atoms;

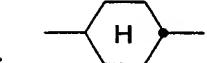
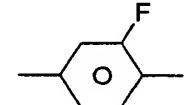
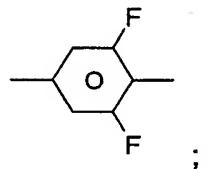
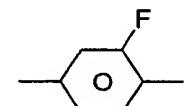
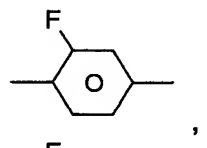
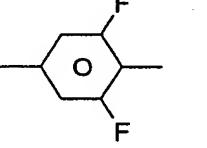
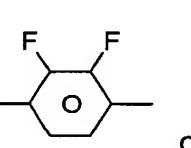
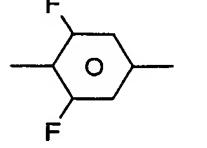
10 Z^{11} is a single bond, -CH₂-CH₂-, -CH=CH-, -CH=CF-, -CF=CH-, -CF=CF-, -C≡C-, -COO-, -OCO-, -CF₂O- or -OCF₂-, independently of one another, are 0 or 1;

15 a and f, are each, independently of one another, 0, 1 or 2;

 b, c, d and e

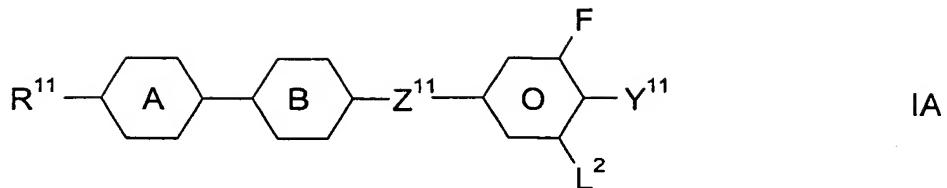
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20 is  ,  ,  or
 ; and
 ,  ,
 ,  ,  or


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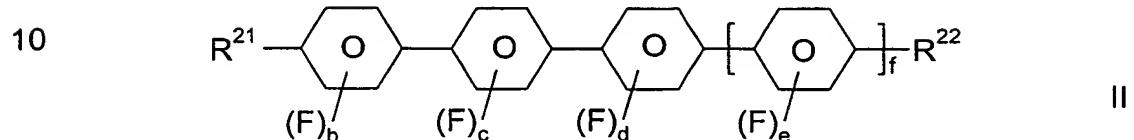
30 2. Liquid-crystalline medium according to Claim 1, comprising
- at least one compound of the formula IA



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and

- at least one compound of the formula II



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in which

L² is H or F;

20

R¹¹ is H, a halogenated or unsubstituted alkyl radical having from 1 to 15 carbon atoms, where, in addition, one or more CH₂ groups in these radicals may each be replaced, independently of one another, by -C≡C-, -CH=CH-, -O-, -CO-O- or -O-CO- in such a way that O atoms are not linked directly to one another;

R²¹ and R²² are each, independently of one another, H, Cl, F, CN, SF₅, SCN, NCS, a halogenated or unsubstituted alkyl radical having from 1 to 15 carbon atoms, where, in addition, one or more CH₂ groups in these radicals may each be replaced, independently of one another, by -C≡C-, -CH=CH-, -O-, -CO-O- or -O-CO- in such a way that O atoms are not linked directly to one another;

30

Y¹¹ is F, Cl, CN, SF₅, SCN, NCS, a halogenated alkyl radical, a halogenated alkenyl radical, a halogenated alkoxy radical or a halogenated alkenyloxy radical, each having up to 6 carbon atoms;

35

Z^{11} is a single bond, -COO- or -CF₂O-;
 f is 0 or 1;
 b, c, d and e are each, independently of one another, 0, 1 or 2;

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is , , or

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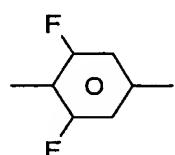


is , , ; and

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, , or

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3. Liquid-crystalline medium according to any one of Claims 1 and 2, characterised in that f in the formula II is 0.

25 4. Liquid-crystalline medium according to any one of Claims 1 and 2, characterised in that f in the formula II is 1.

5. Liquid-crystalline medium according to any one of Claims 1 to 4, characterised in that

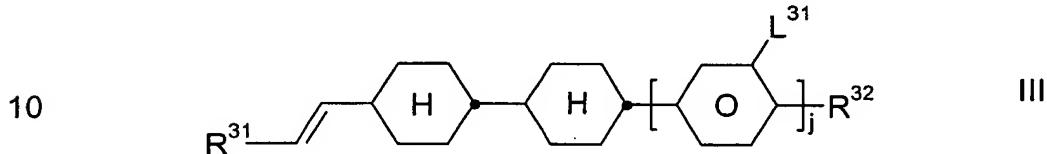
30 R^{11} and R^{21} , independently of one another, are straight-chain alkyl having from 1 to 7 carbon atoms; and

R^{22} is Cl, F, CF₃ or straight-chain alkyl having from 1 to 7 carbon atoms.

6. Liquid-crystalline medium according to any one of Claims 1 to 5, characterised in that

Y¹¹ is F, Cl, CF₃, OCHF₂ or OCF₃.

5 7. Liquid-crystalline medium according to any one of Claims 1 to 6, characterised in that it furthermore comprises a compound of the formula III



in which

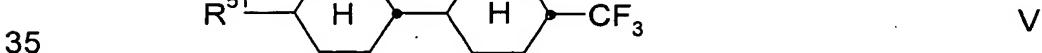
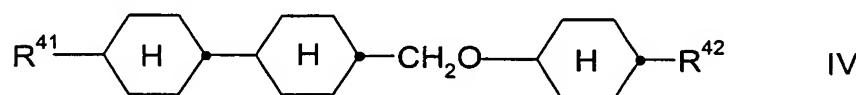
L³¹ is H or F;

15 R³¹ is H, a halogenated or unsubstituted alkyl radical having from 1 to 15 carbon atoms, where one or more CH₂ groups in these radicals may also be replaced by -C≡C-, -CH=CH-, -O-, -CO-O- or -O-CO- in such a way that O atoms are not linked directly to one another;

20 R³² is H, F, Cl, a halogenated or unsubstituted alkyl radical having from 1 to 15 carbon atoms, where one or more CH₂ groups in these radicals may also be replaced by -C≡C-, -CH=CH-, -O-, -CO-O- or -O-CO- in such a way that O atoms are not linked directly to one another; and

25 j is 0 or 1.

30 8. Liquid-crystalline medium according to any one of Claims 1 to 7, characterised in that it furthermore comprises a compound of the formulae IV and/or V



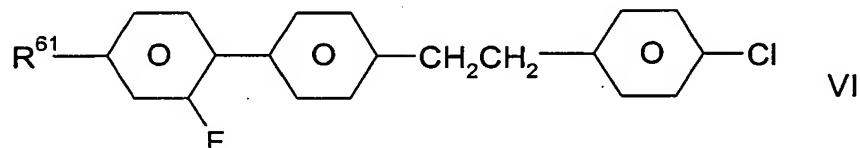
in which

R^{41} , R^{42} and R^{51} , independently of one another, are alkyl having from 1 to 12 carbon atoms.

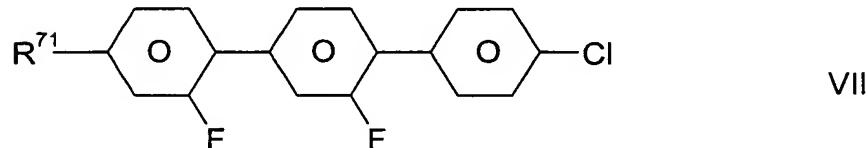
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9. Liquid-crystalline medium according to any one of Claims 1 to 8, characterised in that it furthermore comprises a compound of the formulae VI and/or VII and/or VIII

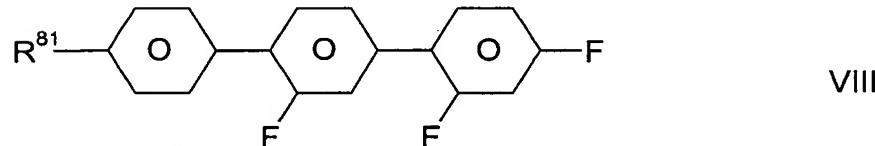
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in which

25 R^{61} , R^{71} and R^{81} , independently of one another, are alkyl having from 1 to 12 carbon atoms.

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10. Liquid-crystalline medium according to any one of Claims 1 to 9, characterised in that the proportion of the compounds of the formula II in the mixture as a whole is from 0.1 to 10% by weight, in particular from 0.25 to 5% by weight and particularly preferably from 0.5 to 2% by weight.

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11. Use of the liquid-crystalline medium according to any one of Claims 1 to 10 for electro-optical purposes.

12. Electro-optical liquid-crystal display containing a liquid-crystalline medium according to any one of Claims 1 to 10.

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